

## IN THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Canceled)
2. (Canceled)
3. (Currently amended) ~~The method of claim 1~~ A method usable with a subterranean well, comprising:
  - obtaining pressure measurements along a wellbore during flowing of the well without intervening in the well; and
  - using a model to determine from the pressure measurements a distribution of a permeability profile in the vicinity of the well, wherein the using comprises:
    - providing an estimation of the distribution to the model; and
    - refining the estimation using the pressure measurements.
4. (Original) ~~The method of claim 3~~ A method usable with a subterranean well, comprising:
  - obtaining pressure measurements along a wellbore during flowing of the well without intervening in the well; and
  - using a model to determine from the pressure measurements a distribution of a permeability profile in the vicinity of the well, wherein using comprises:
    - providing an estimation of the distribution to the model; and
    - refining the estimation using the pressure measurements, wherein the refining comprises performing an inversion of a connection factor that interrelates the distribution to the pressure measurements.
5. (Currently amended) The method of claim 3 4, further comprising:

deploying a sensor into the well; and  
obtaining the pressure measurements from the sensor.

6. (Original) The method of claim 5, wherein the deploying comprises  
deploying an optical fiber into the well.

7. (Currently amended) ~~The method of claim 1, further comprising~~ A method  
usable with a subterranean well, comprising:

obtaining pressure measurements along a wellbore during flowing of the well  
without intervening in the well;

using a model to determine from the pressure measurements a distribution of a  
permeability profile in the vicinity of the well, wherein using comprises:

providing an estimation of the distribution to the model; and

refining the estimation using the pressure measurements; and

treating the well in response to the determined distribution of the characteristic.

8. (Currently amended) The method of claim 3, further comprising placing a  
subsequent well in response to the determination of a specific type of distribution of the  
characteristic.

9. (Currently amended) The method of claim 3, wherein the obtaining comprises  
using sensors that are permanently mounted in the well.

10. (Canceled)

11. (Canceled)

12. (Canceled)

13. (Canceled)

14. (Canceled)

15. (Canceled)

16. (Canceled)

17. (Canceled)

- 18. (Canceled)
- 19. (Canceled)
- 20. (Canceled)
- 21. (Canceled)
- 22. (Canceled)
- 23. (Canceled)
- 24. (Canceled)
- 25. (Canceled)

26. (New) The method of claim 4, further comprising:  
deploying a sensor into the well; and  
obtaining the pressure measurements from the sensor.

27. (New) The method of claim 26, wherein the deploying comprises deploying an optical fiber into the well.

28. (New) The method of claim 4, further comprising treating the well in response to the determined distribution of the characteristic.

29. (New) The method of claim 4, further comprising placing a subsequent well in response to the determination of a specific type of distribution of the characteristic.

30. (New) The method of claim 4, wherein the obtaining comprises using sensors that are permanently mounted in the well.